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ABSTRACT

The United States Training and Employment Service General Aptitude Test Battery (GATB), first published in 1947, has been included in a continuing program of research to validate the tests against success in many different occupations. The GATB consists of 12 tests which measure nine aptitudes: General Learning Ability; Verbal Aptitude; Numerical Aptitude; Spatial Aptitude; Form Perception; Clerical Perception; Motor Coordination; Finger Dexterity; and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, and a standard deviation of 20. Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, when combined, predict job performance. Cutting scores are set only for those aptitudes which aid in predicting the performance of the job duties of the experimental sample. The GATB norms described are appropriate only for jobs with content similar to that shown in the job description presented in this report. A description of the validation sample is included. (AG)

ED 065624

TECHNICAL REPORT

ON

STANDARDIZATION OF THE GENERAL APTITUDE TEST BATTERY

FOR

SALES CLERK (ret. tr.) 1-70.10

B-555 S-278

(Superseded B-64)

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U. S. Employment Service
in Cooperation with
Pennsylvania State Employment Service

October 1963

GATB # 2462

STANDARDIZATION OF THE GENERAL APTITUDE TEST BATTERY

FOR

SALES CLERK (ret. tr.) 1-70.10

B- 555
(Supersedes B-64)

Summary

The General Aptitude Test Battery, B-1002A, was administered to a final sample of 59 women employed as Sales Clerk 1-70.10 by F. W. Woolworth in Philadelphia Pennsylvania. The criterion consisted of supervisory ratings. On the basis of mean scores, standard deviations, correlations with the criterion, job analysis data, and their combined selective efficiency, Aptitudes V-Verbal Aptitude, N-Numerical Aptitude and K-Motor Coordination were selected for inclusion in the final test norms.

GATB Norms for Sales Clerk 1-70.10, B-555.

B-1001			B-1002		
Aptitude	Tests	Minimum Acceptable Aptitude Score	Aptitude	Tests	Minimum Acceptable Aptitude Score
V	CB-1-J	85	V	Part 4	85
N	CB-1-D CB-1-I	85	N	Part 2 Part 6	80
T	CB-1-G CB-1-K	80	K	Part 8	85

Effectiveness of Norms

The data in Table IV indicate that only 66 percent of the non-test-selected workers used for this study were good workers; if the workers had been test-selected with the above norms, 85 percent would have been good workers. 34 percent of the non-test-selected workers used for this study were poor workers; if the workers had been test-selected with the above norms, only 15 percent would have been poor workers.

TECHNICAL REPORT

I. Purpose

This study was conducted to determine the best combination of aptitudes and minimum scores to be used as norms on the General Aptitude Test Battery for the occupation of Sales Clerk 1-70.10.

II. Sample

The GATB, B-1002A, was administered during September and October 1959 to 59 female workers employed as Sales Clerks 1-70.10 by the F. W. Woolworth Company in Philadelphia, Pennsylvania. No previous work experience in selling is required for employment with the company. At least eight years of education is desirable but not mandatory. Inexperienced workers are given one month of training. After completing classroom training, the trainee is turned over to an experienced worker (sponsor) for training at the counter. The sponsor supervises the new employee for a minimum of 6 hours the first day and for at least two to four hours the second and third day. From then on, the sponsor checks and rechecks the new employee from time to time.

TABLE I

Means (M), Standard Deviations (σ), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education, and Experience

N = 59	M	σ	Range	r
Age (years)	30.5	11.8	16-58	.435*
Education (years)	10.8	1.4	8-12	.074
Experience (months)	60.4	64.3	1-216	.512*

*Significant at the .01 level

III. Job Description

Job Title: Sales Clerk (ret. tr.) 1-70.10

Job Summary: Prepares counter for daily activity, waits on customer and receives cash payment for article selected, wraps article and hands it to customer. Applies suggestive selling methods where applicable, and replenishes and arranges merchandise neatly on counter. Periodically checks stock, determines additional items needed, and secures needed items from stock bins.

Work Performed: Prepares counter for daily activities: Receives days allotment of change from cashier, removes covers from counter, and uses dust cloth or feather duster to remove dust from merchandise. Observes that merchandise is neatly arranged, that counters are filled with clean fresh display, and that stock under counter is adequate.

Waits on customer: Greets customer and reaches across counter to pick up article selected by customer. Weighs or measures desired quantity. Informs customer of amount of sale, including State and Federal Tax if applicable, as well as the denomination tendered by the customer. Registers amount of sale on cash register, selects proper change from cash drawer, deposits determined amount of sales tax into metal box attached to cash register and counts change into customer's hand. May use dollar pad maintained at the register for adding total sales if customer purchases more than one item. Consults tax schedule to determine amount of tax to be collected and adds tax to total purchase price.

Wraps article: Selects proper size wrapper from an assortment of wrapping supplies. Encloses article in bag or wraps article neatly and securely, using twine and/or gummed paper. Reaches across counter to hand the completed package to the customer.

When not waiting on customer, arranges stock on counter, or replenishes counter from stock under counter. Inventories counter, using check list; observes that items listed are on counter and places check mark in book to indicate item is on sale or marks list "Out" if item is out of stock. Checks stock on and under counter, determines if additional items are needed, secures needed item from stock bins, restocks counter and places surplus items under counter.

IV. Experimental Battery

All the tests of the GATB, B-1002A, were administered to the sample group.

V. Criterion

The criterion data were collected on October 13, 1959 and consisted of supervisory ratings on USES Form SP-21, "Descriptive Rating Scale." The rating scale consisted of nine items covering different aspects of job performance, with five alternatives for each item. Weights of one through five, indicating the degree of job proficiency attained, were assigned to the alternatives. The distribution of final criterion scores ranged from 16-45 with a mean score of 31.5 and a standard deviation of 7.0.

VI. Qualitative and Quantitative Analyses

A. Qualitative Analysis

On the basis of the job analysis data, the following aptitudes were rated "important" for success in this occupation:

Intelligence (G) - required in understanding basic techniques of salesmanship and in calling upon memory, knowledge and experience in serving the general public.

Verbal Aptitude (V) - required in greeting customer with friendly salutation and talking to customer relative to sale, exchange or refund.

Numerical Aptitude (N) - required in weighing and measuring desired quantities, calculating cost of articles, determining State and Federal taxes, and in counting merchandise to determine number on hand and in inventory.

Clerical Perception (Q) - required in preparing inventories and sales slips.

B. Quantitative Analysis:

TABLE II

Means (M), Standard Deviations (σ), and Pearson Product-Moment Correlations with the Criterion (r) for the Aptitudes of the GATB; N = 59

Aptitudes	M	σ	r
G-Intelligence	87.9	13.8	.508**
V-Verbal Aptitude	90.9	12.5	.454**
N-Numerical Aptitude	92.0	15.2	.502**
S-Spatial Aptitude	82.9	15.6	.238
P-Form Perception	93.8]	17.9	.110
Q-Clerical Perception	99.4	13.0	.269*
K-Motor Coordination	100.6	17.3	.348**
F-Finger Dexterity	93.6	17.7	.002
M-Manual Dexterity	98.9	17.2	.066

*Significant at the .05 level.
**Significant at the .01 level.

C. Selection of Test Norms:

TABLE III

Summary of Qualitative and Quantitative Data

Type of Evidence	Aptitudes								
	G	V	N	S	P	Q	K	F	M
Job Analysis Data									
Important	X	X	X			X			
Irrelevant									
Relatively High Mean						X	X		X
Relatively Low Sigma	X	X				X			
Significant Correlation with Criterion	X	X	X			X	X		
Aptitudes to be Considered for Trial Norms	G	V	N			Q	K		

Trail norms consisting of various combinations of Aptitudes G, V, N, Q and K with appropriate cutting scores were evaluated against the criterion by means of the Phi Coefficient technique. A comparison of the results showed that B-1002 norms consisting of V-85, N-80 and K-85 had the best selective efficiency.

VII. Validity of Norms (concurrent)

The validity of the norms was determined by computing a Phi Coefficient between the test norms and the criterion and applying the Chi Square test. The criterion was dichotomized by placing 34 percent of the sample in the low criterion group because this percent was considered to be the unsatisfactory or marginal workers.

Table IV shows the relationship between test norms consisting of Aptitudes V, N and K with critical scores of 85, 80 and 85, respectively, and the dichotomized criterion for Sales Clerk 1-70.10. Workers in the high criterion group have been designated as "good workers" and those in the low criterion group as "poor workers."

TABLE IV

Validity of Test Norms for Sales Clerk 1-70.10
(V-85, N-80, K-85)

N = 59	Non-Qualifying Test Scores	Qualifying Test Scores	Total
Good Workers	11	28	39
Poor Workers	15	5	20
Total	26	33	59

Phi Coefficient = .45
χ^2 = 11.741
P/2 < .0005

The data in the above table indicate a significant relationship between the test norms and the criterion for the sample.

VIII. Conclusions

On the basis of the results of this study, Aptitudes V, N and K with minimum scores of 85, 80 and 85, respectively, have been established as B-1002 norms for Sales Clerk 1-70.10. The equivalent B-1001 norms consist of V-85, N-85 and T-80.

IX. Determination of Occupational Aptitude Pattern

The data for this study did not meet the requirements for incorporating the occupation studied into any of the 35 OAP's included in Section II of the Guide to the Use of the General Aptitude Test Battery, January 1962. The data for this sample will be considered for future groupings of occupations in the development of new occupational aptitude patterns.